

Application No.: 09/879,448

Filing Date: June 12, 2001

Docket No.: 2001B056

Page 5

REMARKS

The Examiner has stated that Claims 34-51 are allowed. (See Office Action page 4, last paragraph.) Applicants have amended Claims 1, 31, 52, 56, 58 and 60; and have canceled Claims 54-55. Accordingly, Claims 1-53 and 56-68 are pending.

Claims 31-33 and 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Peiffer et al. (U.S. Patent No. 6,086,982). Claim 53 is rejected under 35 U.S.C. 103(a) as being obvious over Peiffer et al.

Claims 1-4, 10, 12-18, 20, 23-25 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bothe et al. (U.S. Patent No. 4,734,317). Claims 5-9, 29, 30, 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Bothe et al. Claims 11, 19, 21, 22, 26, 52 and 53 are rejected under 35 U.S.C. 103(a) as being obvious over Bothe et al.

Claims 1, 3-6, 10, 12-19, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Shah et al. (U.S. Patent No. 6,291,063). Claims 7-9 and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Shah et al. Claim 11 is rejected under 35 U.S.C. 103(a) as being obvious over Shah et al.

Claims 1-18, 20, 24, 25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Bader et al. (U.S. Patent No. 5,972,469). Claims 29, 30, 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Bader et al. Claim 27 is rejected under 35 U.S.C. 103(a) as being obvious over Bader et al. in view of Touhsaent . (U.S. Patent No. 6,013,353).

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 6

The independent claims which have been rejected are Claims 1, 31, 52 and 60. These claims all recite films which comprise three layers. The Examiner states throughout the Office Action that these rejected claims recite films where "there is no specific order to the layers..." (For example, see Office Action page 12, last paragraph.) That is, according to the Examiner, the claims as written allow the silicone-containing layer to be an inner, outer, or an intermediate layer.

The silicone-containing layers of the films of the present invention are the tie/transition layers. The tie/transition layers are between the skin and core layers. To further define this arrangement of the layers of the three layer films, Claims 1, 31, 52 and 60 have been amended. In particular, these claims have been amended to clearly set forth that the transition/tie layer of the films is between the core and skin layers. Support for these amendments are found throughout the application, including page 7, lines 3-11, and Figure 2.

The Examiner states that "The prior art of record does not appear to teach or disclose a silicone additive in a tie layer." (Office Action, page 4, last sentence.) Accordingly, as a result of the present amendment, the Applicants respectfully assert that none of the cited prior art references anticipate, or are obvious over, the claims of the present application.

Rejections under Bothe et al. (U.S. Patent No. 4,734,317)

Claims 1-4, 10, 12-18, 20, 23-25 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bothe et al. (U.S. Patent No. 4,734,317). Claims 5-9, 29, 30, 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Bothe et al. Claims 11, 19, 21, 22, 26, 52 and 53 are rejected under 35 U.S.C. 103(a) as being obvious over Bothe et al. Of these rejected claims, only Claims 1, 31, 52 and 60 are independent. These claims have been amended.

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 7

Bothe et al. disclose a three-layer polyolefin film having a base layer with sealing layers present on each side. The sealing layers are the outer layers of the film. Polydialkylsiloxane is incorporated in the first of the two sealing layers, i.e., an outer layer. The second sealing layer is subjected to corona treatment and has polydialkylsiloxane, not incorporated, but present on its outer surface. The polydialkylsiloxane was transferred to the surface of the second sealing layer by contact with the first sealing layer. Thus, Bothe et al. disclose **incorporation of polydialkylsiloxane into a first outer layer**, and subsequent transfer of the polydialkylsiloxane to the surface of the second outer layer. Bothe et al does not disclose, nor suggest, incorporation of a silicone additive into a transition layer.

In contrast, the films of the present invention include a silicone additive only in the transition layers. Independent Claims 1, 31, and 60 have been amended so as to further define the arrangement of the layers of the three layer film. In particular, amended Claims 1, 31, and 60 clearly set forth that the transition layer of the films is between the core and the skin layer. Support for these amendments are found throughout the application, including page 7, lines 3-11, and Figure 2.

Independent Claim 52 has been amended to incorporate Claim 54. Thus, as amended, Claim 52 recites a film with four layers. The arrangement of the layers of these four layer films have been clearly defined; the transition layer of the films are between the core and skin layers.

Rejections under Shah et al. (U.S. Patent No. 6,291,063)

Claims 1, 3-6, 10, 12-19, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Shah et al. (U.S. Patent No. 6,291,063). Claims 7-9 and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Shah et al. Claim 11 is rejected under 35 U.S.C. 103(a) as being

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 8

obvious over Shah et al. Of these rejected claims, only Claim 1 is independent. Claim 1 has been amended.

Shah et al. disclose films which have organosiloxane in one or more outer layers. (See col. 13, lines 62-65.) By "outer layer" Shah et al. refers to "outside layer." (See col. 9, lines 55-63, and col. 10, lines 3-9.) Shah et al does not disclose, nor suggest, incorporation of a silicone additive in any other layer. In particular, Shah et al does not disclose, nor suggest, incorporation of a silicone additive in a transition layer.

In contrast, the present invention discloses films with a silicone additive in the transition layer. Independent Claim 1 has been amended so as to further define the arrangement of the layers of the three layer film. In particular, amended Claim 1 clearly sets forth that the transition layer of the films is between the core and skin layers. Support for this amendment is found throughout the application, including page 7, lines 3-11, and Figure 2.

Rejections under Bader et al. (U.S. Patent No. 5,972,469)

Claims 1-18, 20, 24, 25 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Bader et al. (U.S. Patent No. 5,972,469). Claims 29, 30, 60 and 61 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as being obvious over Bader et al. Claim 27 is rejected under 35 U.S.C. 103(a) as being obvious over Bader et al. in view of Touhsaent . (U.S. Patent No.:6,013,353). Of these rejected claims, only Claim 1 is independent. Claim 1 has been amended.

Bader et al. disclose a film structure including a first sealable skin layer which has an external surface containing a non-migratory particulate crosslinked hydrocarbyl substituted polysiloxane and silica antiblock particles. Bader et al does not disclose, nor suggest,

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 9

incorporation of a silicone additive in any other layers. In particular, Bader et al does not disclose, nor suggest, incorporation of a silicone additive in a transition layer.

In contrast, the present invention describes films with a silicone additive in the transition layer. Independent Claim 1 has been amended so as to further define the arrangement of the layers of the three layer film. In particular, amended Claim 1 clearly sets forth that the transition layer of the films are between the core and skin layers. Support for this amendment is found throughout the application, including page 7, lines 3-11, and Figure 2.

Rejections under Peiffer et al (U.S. Patent No. 6,086,982)

Claims 31-33 and 52 are rejected under 35 U.S.C. 102(e) as being anticipated by Peiffer et al. (U.S. Patent No. 6,086,982). Claim 53 is rejected under 35 U.S.C. 103(a) as being obvious over Peiffer et al. Of these rejected claims, only Claims 31 and 52 are independent. Claims 31 and 52 have been amended.

On page 12, last paragraph of the Office Action, the Examiner states that:

As Claims 31 and 52 read, there is no specific order to the layers, and the claim as written reads on a layer on one side of the core and another layer on the other side of the core. The layers of Peiffer et al., as cited, can read on this configuration. Peiffer et al. disclose that polydimethylsiloxane can be added to a top ply (col. 6, lines 60-67), and then be surface treated (col. 7, lines 41-42). (Emphasis added.)

Thus, Peiffer et al. disclose **polydimethylsiloxane added to a top ply**, not to a tie or transition layer.

In contrast, the film of the present invention discloses a silicone additive in the transition layer of the films. Claim 31 recites a method of making such a film comprising the steps of coextruding a film of at least three layers which comprises a transition layer

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 10

comprising a silicon additive, and a skin layer being substantially free of a silicon additive; cooling/quenching the film; and surface treating one or more exposed surfaces of the film with a corona, flame, or plasma treatment.

To address the Examiner's concern, Claim 31 has been amended so as to further define the arrangement of the layers of the three layer film. In particular, amended Claim 31 clearly sets forth that the transition layer of the films is between the core and skin layers. Support for this amendment is found throughout the application, including page 7, lines 3-11, and Figure 2.

Independent Claim 52 has been amended to incorporate Claim 54. Thus, as amended, Claim 52 recites a film with four layers. The arrangement of the layers of these four layer films have been clearly defined; the transition layer of the films are between the core and skin layers.

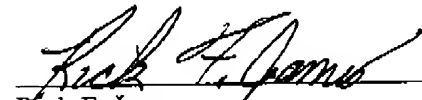
Claim Objection

As suggested by the Examiner, the spelling of "silicon" has been revised in Claim 31 to "silicone" to maintain uniformity. (Office Action, page 3, fourth paragraph.)

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 11

In view of the amendment and remarks set forth above, it is respectfully submitted that the present application is in all respects in condition for allowance which action is earnestly requested. If for any reason the application, as amended, is not deemed in condition for allowance, the Examiner is respectfully requested to contact Applicants' attorney at the telephone number indicated below so that additional amendments may be entered as required. If any fees are due, please charge our Deposit Account 08-2461 for such sum.

Respectfully submitted,


Rick F. James
Registration No.: 48,772
Attorney for Applicant(s)

ExxonMobil Chemical Company
Law Technology
P.O. Box 2149
Baytown, Texas 77522-2149
Tel: (281) 834-2438
Fax: (281) 834-2911

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 12

VERSION OF AMENDMENT WITH MARKINGS
TO SHOW CHANGES MADE

IN THE CLAIMS:

Please cancel Claims 54-55.

Please amend Claims 1, 31, 52, 56, 58 and 60 as follows:

1. (Twice Amended) A thermoplastic film comprising:

- (a) a core layer comprising a Ziegler-Natta catalyst-polymerized polypropylene, polyethylene, polybutene, copolymers thereof or blends thereof wherein the core layer comprises the interior of the film;
 - (b) a first transition layer comprising a polyolefin and a silicone additive, wherein the first transition layer is exterior to the core layer; and
 - (c) a first skin layer comprising a polyolefin wherein the first skin layer is exterior to the first transition layer and the core layer;
- wherein the first transition layer is between the core layer and the first skin layer.

31. (Amended) A method of making a film comprising the steps of:

- (1) coextruding a film through a die wherein the film comprises a core layer comprising a polyolefin wherein the core layer comprises the interior of the film; a first transition layer comprising a polyolefin and a silicone additive, wherein the first transition layer is exterior to the core layer; and a first skin layer comprising a polyolefin, and being substantially free of a ~~silicon~~ silicone additive, wherein the first skin layer is exterior to the first transition layer, and wherein said the first skin layer is exterior to the core layer, and wherein the first transition layer is between the core layer and the first skin layer;
- (2) cooling/quenching the film; and
- (3) surface treating one or more exposed surfaces of the film with a corona, flame, or plasma treatment.

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 13

52. (Amended) A thermoplastic film comprising:

(a) a core layer comprising a polypropylene homopolymer polyolefin wherein the core layer comprises the interior of the film;

(b) a first transition layer comprising a material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene random copolymers, linear low density polyethylenes, polypropylene homopolymer, and blends thereof; polyolefin and a silicone additive, wherein the first transition layer is exterior to the core layer, and wherein the silicone additive has a viscosity greater than about 1,000,000 centistokes; and

(c) a first skin layer comprising a polyolefin material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene random copolymers, linear low density polyethylenes, and blends thereof, wherein the first skin layer is exterior to the first transition layer is between the first skin layer and the core layer; and

(d) a second skin layer comprising a material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene (PB) random copolymers, linear low density polyethylenes, high density polyethylenes, medium density polyethylenes, polypropylene homopolymers, amorphous polyamides, EVOH copolymers and blends thereof, wherein the second skin layer is exterior to said core layer and on a side of said core opposite to said first transition layer and first skin layer.

56. (Amended) The film of claim 52 ~~wherein the a core layer comprises polypropylene homopolymer; wherein the first transition layer comprises a material selected from the group consisting of ethylene propylene butylene (EPB) terpolymers, ethylene propylene (EP) copolymers, propylene butylene random copolymers, polypropylene homopolymer, and blends thereof; wherein the first skin layer comprises material selected from the group~~

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 14

consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene random copolymers, and blends thereof; wherein said film further comprises further comprising a second transition layer, wherein said second transition layer is between exterior to said core layer and said second skin layer on a side of said core layer opposite to said first transition layer and first skin layer, and wherein said second transition layer comprises a silicon additive and a material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene random copolymers, polypropylene homopolymer, and blends thereof; and wherein said film further comprises a second skin layer exterior to said core layer and said second transition layer, and on a side of said core opposite to said first transition layer and first skin layer, wherein said second skin layer comprises a material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene (PB) random copolymers, and blends thereof.

58. (Amended) The film of claim 52 ~~wherein the core layer comprises polypropylene homopolymer, wherein the first transition layer comprises a material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene random copolymers, polypropylene homopolymer, and blends thereof; wherein the first skin layer comprises material selected from the group consisting of ethylene-propylene-butylene (EPB) terpolymers, ethylene-propylene (EP) copolymers, propylene-butylene random copolymers, and blends thereof; wherein said film further comprises~~ further comprising a second transition layer, wherein said second transition layer is between exterior to said core layer and said second skin layer on a side of said core layer opposite to said first transition layer and first skin layer, and wherein said second transition layer comprises ~~comprising~~ a material selected from the group consisting of polypropylene homopolymer, maleic anhydride grafted polypropylene, and blends thereof; and wherein said film further comprises a second skin layer exterior to said core layer and said second transition layer, and on a side of said core opposite to said first transition layer

Application No.: 09/879,448
Filing Date: June 12, 2001
Docket No.: 2001B056
Page 15

~~and first skin layer, wherein said second skin layer comprises a material selected from the group consisting of amorphous polyamides, EVOH copolymers, high density polyethylenes, and blends thereof.~~

60. (Amended) A thermoplastic film comprising:

- (a) a core layer comprising a polyolefin wherein the core layer comprises the interior of the film;
- (b) a first transition layer comprising a polyolefin and a silicone additive, wherein the first transition layer is exterior to the core layer; and
- (c) a first skin layer comprising a polyolefin wherein the first skin layer is exterior to the first transition layer and the core layer, and wherein the first skin layer has an exposed surface and wherein the exposed surface of the first skin layer is subjected to a treatment selected from the group consisting of corona discharge, plasma, and flame, wherein the film has a seal strength of said first skin layer of at least about 200 grams per inch and has a coefficient of friction of at most about 0.65,
and wherein the first transition layer is between the first skin layer and the core layer.